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November 14th, 1854.

The President, Mr. **Ord**, in the Chair.

A paper was presented for publication from Mr. Charles Girard, entitled, "Characteristics of some Cartilaginous Fishes of the Pacific Coast of North America," which was referred to Dr. Rand, Dr. Hallowell and Dr. Leidy.

A communication was read from the Berlin Horticultural Society, dated Berlin, Sept. 25th, 1854, transmitting donations to Library, and proposing exchanges. Referred to Committee on Proceedings.

November 21st.

Vice-President **Bridges** in the Chair.

Letters were read—

From the Royal Academy of Sciences of Liege, dated 8th July, 1854, accompanying their donation acknowledged this evening; and also acknowledging the receipt of the publications of the Academy.

From the Imperial Academy of Sciences of Vienna, acknowledging the receipt of the publications of the Academy, and desiring missing numbers of the same.

From Dr. J. G. Flügel, dated Leipzig, August 1, 1854, in relation to certain charges for transmission of foreign works for the Academy.

A paper was read from Mr. Charles Girard, intended for the Proceedings, being an "Abstract of a Report to Lieut. Gilliss, U. S. N., upon the Fishes collected during the U. S. Astronomical Expedition to Chili." Referred to Mr. Cassin, Dr. Le Conte, and Dr. Hallowell.

Dr. Leidy read a paper intended for publication in the Proceedings, entitled, "Notice of some fossil Bones discovered by Mr. Francis A. Lincke, in the banks of the Ohio River, Indiana." Referred to Major Le Conte, Dr. Zantzinger, and Dr. Coates.

The following resolution was unanimously adopted: *Resolved*, That the thanks of the Society be tendered to Mr. John A. Guex, for the very extensive and superb collection of Coleopterous Insects, presented by him this evening to the Academy.

November 28th.

Vice-President **Bridges** in the Chair.

The Committee on Dr. Holbrook's "Descriptions of Fishes of Florida," reported in favor of publication in the Journal.

The Committees on Mr. Girard's papers, read 14th and 21st insts.; and on Dr. Leidy's paper, read 21st inst., reported in favor of publication in the Proceedings.

Characteristics of some Cartilaginous Fishes of the Pacific coast of North America.

By CHARLES GIRARD.

1. CESTRACION FRANCISCI, G.—The largest of these specimens now before us, and measuring nearly two feet, bears a very strong resemblance to *C. Phillippi*, though of a somewhat more bulky appearance. The bony ridge, above the eye, is much more developed, and the fins are larger also. The posterior margin of the caudal is bilobed instead of being rounded: an emargination corresponding to the top of the vertebral column. The anal is placed farther back; its tip projecting beyond the anterior margin of the inferior lobe of the caudal. The posterior extremity of the ventrals extends beyond the anterior margin of the second dorsal. Color, above yellowish grey, darker in the young; beneath light yellow. Small roundish black spots are spread all over the body and fins.

Collected by Lt. W. P. Trowbridge, U. S. A., in the Bay of Monterey, Cal.

2. TRIAKIS SEMIFASCIATUM, G.—This species is closely allied to *T. scyllium*, from which it differs by a more backward position of the mouth or else a more developed snout. The chagrin which covers the surface of the skin is more acute, giving to the fish a more prickly aspect. Color above olivaceous grey, lighter beneath; yellowish under the head and throat. Dorsal region marked by transverse bands of deep black, with spots of the same hue between the bands, and also beneath them, along the sides of the body. A black spot exists at the base and upper surface of the ventrals and pectorals. The caudal is spotted all over, whilst the dorsals and anal are so only at their base.

Specimens were collected near Presidio, in the Bay of San Francisco, Cal., by Lt. W. P. Trowbridge, U. S. A.

3. SPINAX (ACANTHIAS) SUCKLEYI, G.—Specimens about twenty nine inches long. Snout very much flattened, elongated, and subconical in its outline when viewed from above. Eyes very large, elongated and placed immediately in advance of the mouth. Five branchial apertures well developed. Mouth large. Dorsal fins moderate; spine of anterior dorsal rather small. Pectorals very large and expanded, concave upon their posterior margin. External margin of ventrals rounded. Inferior lobe of caudal deeply emarginated; upper lobe long and lanceolated. Color above of a dark grey with a few small whitish spots; beneath, under the head and belly, dull yellowish; farther back, of a light greyish hue.

Collected at Fort Steilacoom, Puget Sound, W. T., by Dr. Geo. Suckley, U. S. A.

4. RHINOBATUS PRODUCTA, Ayres, in Proc. Cal. Acad. Sc. I. 1854.—A male specimen, thirty eight inches in total length, brought this species to our knowledge. The rostral distance, from the eyes forwards, is of a much lighter hue than the rest of the body. A blackish band exists along the middle of the back, with diffused blotches upon the sides, and a double band of the same color along the middle of the snout.

Collected either at Presidio or Monterey, Cal., by Lt. W. P. Trowbridge, U. S. A.

5. RAJA BINOCULATA, G.—Transverse diameter, from tip of one pectoral fin to the other, greater than the longitudinal, from tip of snout to the extremities of the ventrals. Snout tapering and rounded anteriorly. Eyes moderate; orbit surrounded with spines. A spine upon the dorsal line, near the origin of the trunk. Tail longer than the body and head together, slender and flattened most of its length; provided above with a series of spines extending from its origin to the base of the first dorsal fin. Second dorsal within a short space of the first and approximating the tip of the tail. Ground color olivaceous brown; snout dull whitish. A large subcircular black ring at the base of pectorals enclosing a large subcircular black spot. At a short distance behind these may be seen a much smaller and more obsolete subcircular dark ring, clouded within with

blackish. Beneath dull yellowish; external margin of ventrals blackish. Dorsal fins olivaceous; extremity of caudal blackish with a lighter margin.

Collected by Dr. A. L. Heermann, at San Francisco, Cal., while attached to the Pacific Railroad Survey under Lt. R. S. Williamson, U. S. A.

Abstract of a Report to Lieut. Jas. M. Gilliss, U. S. N., upon the Fishes collected during the U. S. N. Astronomical Expedition to Chili.

By Charles Girard.

PERCIDÆ.

Genus PERCICHTHYS, Girard.

Body oblong or elongated, compressed, covered with scales of medium development, finely ciliated upon their posterior margin. Snout rather thick and blunt, overlapping slightly the lower jaw; card-like teeth on the jaws; velvet-like teeth disposed upon a transverse band in front of the vomer, and upon a narrow band along the palatines, sometimes only towards the anterior extremity of these latter bones. Tongue smooth. Upper surface of head, suborbitals and posterior dilatation of the upper maxillary, covered with scales as well as the cheeks and opercular apparatus. Suborbital and preopercle serrated. Opercle provided with a spine. Branchiostegals six or seven in number. Two dorsal fins contiguous at their base. Insertion of ventral fins immediately beneath the base of pectorals. Anal fin provided with three spiny rays.

1. Percichthys chilensis, G.—*Perca trucha,* Guich. in *Gay,* Hist. de Chile, Zool. II. 1848, 146, Ictiol. Lam. I. bis. fig. 1.—Snout subconical, obtuse anteriorly, and slightly overlapping the lower jaw. Mouth well developed. Posterior extremity of upper maxillary fetching the vertical of the centre of the pupil. Limb of preopercle conspicuously serrated. Exterior margin of sub- and interopercle inconspicuously so. Soft portion of anal deeper than the height of the second dorsal. Caudal moderately emarginated posteriorly. Branchiostegals seven. Ground color yellowish; upper regions covered with brownish or blackish diffused spots.

Inhabits the fresh waters of Chili.

2. Percichthys melanops, G.—Mouth of moderate size; posterior extremity of upper maxillary reaching the vertical of the anterior rim of the orbit. Palatine teeth occupying but a small area towards the anterior extremity of these bones. Opercular spine not very conspicuous. Branchiostegals six. Ground color whitish, minutely and densely dotted with black; dots crowding upon the middle of the scales under the shape of a central blotch, giving to the whole fish quite a dark hue.

Caught in a tributary of the Rio de Maypo, Chili.

Genus PERCILIA, Girard.

General physiognomy percoid, body compressed. Two dorsal fins contiguous at their base, broadly separated in their outline. Mouth rather small or else of medium size; jaws subequal. Small conical teeth upon the maxillaries, and a few card-like ones upon the front of the vomer, none on the palatines. Tongue smooth. A few minute spines along the limb of the preopercle. Opercle without any spine. External edge of suborbitals, sub- and interopercle not crenated. Branchial aperture of either side continuous under the throat. Branchiostegals five or six in number. Scales quite large, and posteriorly ciliated. Cheeks and opercular apparatus scaly; top of head nearly smooth and naked. Suborbitals and maxillary scaleless. Insertion of ventrals behind the base of pectorals. Caudal posteriorly subcrescentic.

3. Percilia gillissi, G.—Snout short and rounded, mouth small; posterior extremity of upper maxillary corresponding to the vertical of the anterior rim

of the eye. A few minute spines upon the angle of preopercle. Scales large, conspicuously ciliated posteriorly. Ground color light reddish or reddish brown, maculated with black.

Inhabits the hydrographic basin of the Rio de Maypo, Chili.

ATHERINIDÆ.

This family heretofore composed of the single genus *Atherina*, having been made on our part the subject of much research, is now understood by us in the following manner. The

Genus ATHERINOPSIS, Girard,

Which we have recently established, is to receive such species as have no palatine teeth, with both jaws equal, and the snout more or less rounded.

Atherina menidia, LINN., and *A. notata*, MITCH., will come under this denomination, alongside with *A. californiensis*, Girard. The

Genus BASILICHTHYS, Girard,

is characterised by the protrusion of the upper jaw beyond the lower; adding to that feature small teeth on both jaws, none on either the vomer or palatines, the intermaxillaries constituting the upper arcade of the mouth, with the maxillaries placed behind them, and the upper surface of the head scaly; including:

4. BASILICHTHYS MICROLEPIDOTUS, G.—*Atherina microlepidota*, JEN. Zool. of Beagle, iv. Fish. 1842, 78. Pl. xvi. fig. 1, 1 a. 1 b.—GUICH. in *Gay*, Hist. de Chile, Zool. II. 1848, 253.

Inhabits the fresh waters of Chili.

And also *Atherina laticlavia*, CUV. & VAL.; *A. argentinensis*, CUV. & VAL.; *A. macrophthalma*, Agass.; *A. bonariensis*, CUV. & VAL. and *A. lichtensteinii*, CUV. & VAL. Finally the

Genus HETEROGNATHUS, Girard,

Is based upon the elongation of the lower jaw which projects considerably beyond the upper one. There are either no teeth on the palate or else they exist in a very rudimentary state only.

Atherina humboldtiana, CUV. & VAL., and *A. vomerina*, CUV. & VAL., will, for the present, constitute this genus.

SILURIDÆ.

Genus NEMATOGENYS, Girard.

Head very much depressed and large. Body posteriorly compressed; posterior margin of caudal fin rounded. Anal opposite space between the dorsal and caudal. Ventrals under the dorsal. Mouth broad but not deeply cleft; its angle provided with a long barbel. A second pair of subhyoidal barbels shorter than the buccal ones. A still shorter and prenasal barbel constituting a third pair of these appendages. Intermaxillaries and dentaries provided with a patch of card-like teeth. Pharyngobranchials covered with similar asperities. Eyes rather small, situated on the upper surface of head. Opercular apparatus spineless. Branchial apertures continuous under the throat. A spine at the external margin of the pectoral fins. Skin scaleless.

5. NEMATOGENYS INERMIS, G.—*Trichomycterus inermis*, GUICH. in *Gay*, Hist. de Chile, Zool. II. 1848, 312, Ictiol. Lam. ix. fig. 2.

Inhabits the fresh waters of Chili.

Genus TRICHOMYCTERUS, (Humb.) Valenc.

Head depressed and rather small. Body anteriorly rounded; posteriorly compressed. Caudal fin emarginated or subemarginated. Anal under the posterior part of the dorsal, and ventrals in advance of the latter. Mouth small or of medium size, inferior, and provided with a double pair of barbels at its angle.

No barbels under the head. One pair of prenasal barbels. Velvet-like teeth upon the intermaxillaries and lower jaw. Palate smooth. Eyes very small, situated on the upper surface of head. Opercular apparatus prickly. Branchial openings not continuous under the throat. Fins without any spiny rays. Skin scaleless and smooth.

6. Trichomycterus maculatus, Cuv. & Val. Hist. Nat. Poiss. xviii. 1846, 493. —Guich. in *Gay's* Hist. de Chile, Zool. II. 1848, 311.
Caught in the Rio Mapocho, near Santiago, Chili.

CLUPEIDÆ.

7. Alosa musica, G.—Body subfusiform, elongated, compressed and tapering posteriorly. Origin of ventrals opposite the middle region of dorsal. Posterior extremity of upper maxillary reaching the vertical of anterior rim of pupil. Lower jaw longest. Back bluish; sides silvery. A series of from nine to eleven roundish spots along the sides.
From Caldera Bay, Chili.

8. Engraulis pulchellus, G.—Body subfusiform, slender and compressed. Origin of ventrals situated in advance of anterior margin of dorsal. Vent immediately opposite the hind margin of same fin. Scales higher than long. Dorsal region purplish; sides of head and body silvery.
From Caldera Bay, Chili.

CHARACINI.

Genus CHEIRODON, Girard.

Body compressed: abdomen not serrated. Adipose fin present. Teeth upon the maxillary, the intermaxillary and the dentary; disposed in a single series along both jaws, and dilated towards their edge, which exhibits generally five acute points. No canine. Palate without teeth. Scales large. Gill openings large. Branchiostegal rays three in number. Pharyngeal teeth velvet-like, very minute. Dorsal fin situated between the ventrals and the anal.

9. Cheirodon pisciculus, G.—Snout short and rounded; eyes rather large. Maxillary teeth very small and few. Dorsal fin higher than long. Caudal forked. Anal nearly as deep as long. Ventrals and pectorals slender. Scales proportionally very large, higher than long. A silvery band along the middle of the flanks, margined above with black. Fins unicolor, olivaceous.
Inhabits the ponds in the vicinity of Santiago, Chili.

MYXINOIDEA.

10. Bdellostoma polytrema, G.—Fourteen respiratory apertures and gills on either side. Twelve teeth on either side in the posterior, as well as in the anterior row. Eyes present. Color not preserved in the specimen before us.
From the Bay of Valparaiso, Chili.

Notice of some Fossil Bones discovered by Mr. Francis A. Lincke, in the banks of the Ohio River, Indiana.

By Joseph Leidy, M.D.

Through the kindness of my friend, Dr. J. G. Norwood, of New Harmony, Indiana, I have had the opportunity of examining a collection of fossil bones, which were obtained by Mr. Francis A. Lincke, from the banks of the Ohio River, near the mouth of Pigeon Creek, a short distance below Evansville, Indiana. The bones are usually found in this locality sticking in the bank, when the water in the river is low.

The specimens are thoroughly impregnated with oxide of iron, which also erves as a cement to adhering pebbles, sand, fragments of Unios, and shells of she species of *Melania canaliculata*, *Paludina ponderosa*, etc.

The collection contains bones of the following animals :—

MEGALONYX JEFFERSONII, *Harlan*.

a. Two tibial diaphyses of the left side of young individuals.
b. A vertebra dentata.
c. A fragment of an os calcis.
d. A metacarpal and a metatarsal bone.
e. An ungual phalanx.

BISON AMERICANUS ? (*fossilis*).

a. A fragment of a cervical vertebra.

CERVUS VIRGINIANUS (*fossilis*).

a. Proximal half of a tibia.
b. Distal half of a tibia.
c. Proximal half of a metacarpal bone.
d. Proximal and distal halves of two metatarsal bones.
e. Portions of two scapulæ.
f. Proximal portion of a first rib.
g. The mutilated cranium of a doe.
h. The superior portion of the cranium of a buck; the antlers having been shed.
i. Three portions of as many lower jaws of different ages. One contains the back five molars very much worn away; a second contains the last two molars a little worn; and the third contains all the molars, but the last temporary one has not been shed, nor is the last true one protruded. All these specimens correspond in size with the same parts of large individuals of the existing *Cervus virginianus*, and have the same form; and they probably belonged to the same species. Besides these specimens, fossil bones of a deer not larger than the *Cervus virginianus* have been found in association with bones of the *Megalonyx*, *Mastodon*, &c., in the vicinity of Natchez, Mississippi. In the cabinet of the Academy there are several specimens from this locality, consisting of a portion of a lower jaw, a fragment of an antler, and the posterior and inferior portions of two crania.

EQUUS AMERICANUS, *Leidy*.

a. The last dorsal vertebra.

TAPIRUS.

a. An inferior back molar tooth of an old individual. The crown is much worn and the fangs are long, spreading, and thickened. It is larger than in the recent *Tapir americanus*, and belongs to the supposed extinct species which I have designated as *Tapirus Haysii*.

CANIS PRIMÆVUS, *Leidy*.

This name is proposed for a species of wolf, which I suppose to be indicated by a specimen, in Mr. Lincke's collection, of a left upper maxillary bone containing the posterior five molars, all of which are nearly entire except the penultimate one. The fragment, however, only differs from the corresponding part of the recent *Canis lupus* of Europe and its American congeners, in being rather larger (about one sixth), and in its having slight variations in several of the molar teeth. Certain naturalists may regard the fossil as an indication of a variety only of the *Canis lupus*, and of the correctness of such a view I shall not attempt to decide. Naturalists have not yet settled among themselves the question of how far characters of a specific value may be obtained from the skulls and teeth of many genera. Most naturalists regard the *Canis lupus*, of Europe, and the *Canis occidentalis* and many other wolves of America as of the same species. Certainly they possess no important osteological differences, but the same may be said of the grizzly bear, the polar bear, and the brown bear, or of the horse, the ass, and the zebra, or of the lion, the tiger, and the panther, etc., etc. Those who have attempted to define a species, I think, have generally given too much value to a mere convenient word, with which naturalists empirically designate groups of organized beings possessing characters of comparative constancy, so far as historic experience has guided them in giving due weight to such constancy.

The question of the origin of species, whether from a single pair or from a plural stock, whether by ascent from the lowest form of life, in gradually diverging series, or whether through innumerable miraculous interpositions, I think is entirely independent of the former question.

To return to the fossil; the maxilla has the same form externally as in the corresponding bone of the recent wolves with which I have compared it. The infra-orbital foramen is on a line vertical to the interval between the third and fourth molar teeth, which is slightly farther back than in any of the skulls of recent wolves examined.

The penultimate molar is less concave posteriorly than in our recent specimens; and its antero-posterior diameter internally is greater in relation to the same diameter externally; in other words, the tooth internally is less narrowed than in recent wolves. It is also broader in the antero-posterior diameter when compared with its transverse diameter. Its basal ridge externally is more abrupt and is slightly mammillated at its border. The second and third molars have their basal ridge internally more developed, which is also the case with the internal oblique ridge descending towards the cusp anteriorly.

The principal measurements of the fossil, in comparison with those of the corresponding part in recent wolves are as follows:

MEASUREMENTS.	Canis lupus, of Europe,	Canis occidentalis, of Pennsylvania.	White Wolf, from Nebraska.	Canis gigas, Townsend, from Oregon,	Canis primævus, (fossil.)
From base of crown of third molar to the upper margin of maxilla, ...	*lines* 24	21	24	26	31
From base of crown of fourth molar to upper margin of maxilla, ...	36	30	34	36	41
From back of last molar to canine alveolus, . .	43	39½	42½	46	53
From back of last molar to front of second molar, .	37	34½	35½	39	45
Antero-posterior diameter of penultimate molar externally, ...	8	7½	8	8	9
Ditto, at middle, ...	6½	5½	6	6	7½
Breadth of do.	10¾	10	10½	10¾	11½
Antero-posterior diameter of ante-penultimate molar .	13	11½	12½	13	16

On motion of Mr. Foulke, it was *Resolved*, That a copy of the Proceedings of the Academy be presented to the Natural History Society of Schuylkill Co., Penn., at Pottsville.

ELECTIONS.

Dr. Thomas Newbold, Mr. Francis Fassitt, and Mr. John A. Guex, all of Philadelphia, were elected *Members;* and Mr. S. S. Rathvon, of Lancaster, Penn., Mr. R. K. Winslow, of Cleveland, Ohio, and Prof. E. Brücke, of Vienna, were elected *Correspondents.*